

Ex. No. : 4.1 Date: 14/04/2024

Register No.: 231401001 Name: Aafrin Fathima N

Factors of a number

Determine the factors of a number (i.e., all positive integer values that evenly divide into a number).

For example:

Input	Result	
20	1 2 4 5 10 20	

	Input	Expected	Got	
~	20	1 2 4 5 10 20	1 2 4 5 10 20	~
~	5	1 5	1 5	~
~	13	1 13	1 13	~

Ex. No. : 4.2 Date: 14/04/2024

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Non Repeated Digit Count

Write a program to find the count of non-repeated digits in a given number N. The number will be passed to the program as an input of type int.

Assumption: The input number will be a positive integer number \geq 1 and \leq 25000. Some examples are as below.

If the given number is 292, the program should return 1 because there is only 1 non-repeated digit '9' in this number

If the given number is 1015, the program should return 2 because there are 2 non-repeated digits in this number, '0', and '5'.

If the given number is 108, the program should return 3 because there are 3 non-repeated digits in this number, '1', '0', and '8'.

If the given number is 22, the function should return 0 because there are NO non-repeated digits in this number.

For example:

Input	Result
292	1
1015	2
108	3
22	0

	Input	Expected	Got	
~	292	1	1	~
~	1015	2	2	~
~	108	3	3	~
~	22	0	0	~

Ex. No. : 4.3 Date: 14/04/2024

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Prime Checking

Write a program that finds whether the given number N is Prime or not. If the number is prime, the program should return 2 else it must return 1.

Assumption: $2 \le N \le 5000$, where N is the given number.

Example 1: if the given number N is 7, the method must return 2

Example2: if the given number N is 10, the method must return 1

For example:

Input	Result
7	2
10	1

```
n=int(input())
1
 2
    f=0
 3 ₹
   for i in range(2,n):
        if n%i==0:
 4 ₹
 5
             f=1
6
             break
7 ▼ if f==1:
8
        print(1)
9 v else:
        print(2)
10
```

	Input	Expected	Got	
~	7	2	2	~
~	10	1	1	~

Ex. No. : 4.4 Date: 14/04/2024

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Next Perfect Square

Given a number N, find the next perfect square greater than N.

Input Format:

Integer input from stdin.

Output Format:

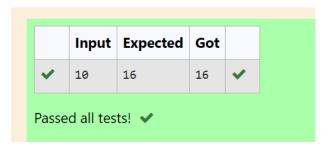
Perfect square greater than N.

Example Input:

10

Output:

16



Ex. No. : 4.5 Date: 14/04/2024

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Nth Fibonacci

Write a program to return the nth number in the fibonacci series. The value of N will be passed to the program as input.

NOTE: Fibonacci series looks like -

```
0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, . . . and so on.
```

i.e. Fibonacci series starts with 0 and 1, and continues generating the next number as the sum of the previous two numbers.

- first Fibonacci number is 0,
- second Fibonacci number is 1,
- third Fibonacci number is 1,
- fourth Fibonacci number is 2,
- fifth Fibonacci number is 3,
- sixth Fibonacci number is 5,
- · seventh Fibonacci number is 8, and so on.

For example:

Input:

7

Output

8

```
1  h=int(input())
2  v if n<2:
    print(n-1)
4  v else:
5    n=n-1
6    fs=[0,1]
7  v    for i in range(1,n):
        fs.append(fs[i]+fs[i-1])
    print(fs[n])</pre>
```

	Input	Expected	Got	
~	1	0	0	~
~	4	2	2	~
~	7	8	8	~

Ex. No. : 4.6 Date: 14/04/2024

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Disarium Number

A Number is said to be Disarium number when the sum of its digit raised to the power of their respective positions becomes equal to the number itself. Write a program to print number is Disarium or not.

Input Format:

Single Integer Input from stdin.

Output Format:

Yes or No.

Example Input:

175

Output:

Yes

Explanation

 $1^1 + 7^2 + 5^3 = 175$

Example Input:

123

Output:

No

For example:

InputResult

175 Yes

123 No

```
1 v def dis(num):
 2
        num_str=str(num)
 3
        sum=0
        for i in range(len(num_str)):
 4 ₹
             sum+=int(num_str[i])**(i+1)
 5
        if sum==num:
 6 ₹
             return "Yes"
 7
        else:
 8 🔻
             return "No"
 9
    num=int(input())
10
   print(dis(num))
11
```

	Input	Expected	Got	
~	175	Yes	Yes	~
~	123	No	No	~

Ex. No. : 4.7 Date: 14/04/2024

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Sum of Series

Write a program to find the sum of the series $1 + 11 + 111 + 1111 + \dots + n$ terms (n will be given as input from the user and sum will be the output)

Sample Test Cases

Test Case 1

Input

4

Output

1234

Explanation:

as input is 4, have to take 4 terms.

1 + 11 + 111 + 1111

Test Case 2

Input

6

Output

123456

For example:

Input	Result
3	123

Program:

```
import math
a=int(input())
b=(pow(10,a+1)-10-9*a)/81
print('{:.0f}'.format(b))
```

	Input	Expected	Got	
~	4	1234	1234	~
~	6	123456	123456	~

Ex. No. : 4.8 Date: 14/04/2024

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Unique Digit Count

Write a program to find the count of unique digits in a given number N. The number will be passed to the program as an input of type int.

Assumption: The input number will be a positive integer number ≥ 1 and ≤ 25000 . For e.g.

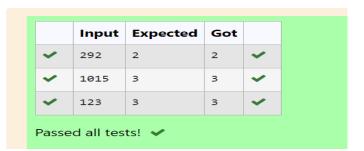
If the given number is 292, the program should return 2 because there are only 2 unique digits '2' and '9' in this number

If the given number is 1015, the program should return 3 because there are 3 unique digits in this number, '1', '0', and '5'.

For example:

Input	Result
292	2
1015	3

```
1 | def digit(N):
2     return len(set(str(N)))
3     N=int(input())
4     print(digit(N))
```



Ex. No. : 4.9 Date: 14/04/2024

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Product of single digit

Given a positive integer N, check whether it can be represented as a product of single digit numbers.

Input Format:

Single Integer input.

Output Format:

Output displays Yes if condition satisfies else prints No.

Example Input:

14

Output:

Yes

Example Input:

13

Output:

No

	Input	Expected	Got	
~	14	Yes	Yes	~
~	13	No	No	~

Correct

Ex. No. : 4.10 Date: 14/04/2024

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Perfect Square After adding One

Given an integer N, check whether N the given number can be made a perfect square after adding 1 to it.

Input Format:

Single integer input.

Output Format:

Yes or No.

Example Input:

24

Output:

Yes

Example Input:

26

Output:

No

For example:

Input	Result
24	Yes

	Input	Expected	Got	
~	24	Yes	Yes	~
~	26	No	No	~
Passed all tests! 🗸				